

CLAIMS

1. An automatic releasing-type rolling head for forming a tapered thread on a pipe, comprising:

a cylindrical housing (30) with front and rear closures;

shaft bearing plates (33) which are slidably supported in a plurality of guide grooves (36) radially provided on inner surfaces of the front and rear closures of the housing (30), said shaft bearing plates being provided on their outer surfaces in the radial directions with oblique surfaces (33b);

thread rolling rollers (35) rotatably supported by the shaft bearing plates (33) through roller shafts (34);

a cam ring (31) which rotates in the housing (30) and has cam oblique surfaces (31a) opposed to the oblique surfaces (33b) of the shaft bearing plates (33);

a lever (44) which abuts, at its oblique surface, against a cam member (45) to prevent movement thereof in association with the cam ring (31); and

an abutment member (41) which is pressed and moved by a thread-rolled pipe,

wherein the rolling load which acts on the rolling rollers (35) during a thread-rolling operation is reduced due to contact friction in the course of transference of the rolling load to the cam oblique surface (45a) of the cam member (45) and to the oblique surface of the lever (44); when the to-be-rolled pipe is thread-rolled to a predetermined length, the oblique surface of the lever (44) is gradually moved away from the cam member (45) moving in association with the cam ring (31), in association with the movement of the abutment member (41); whereby the cam ring (31) is rotated due to the rolling load so that the shaft bearing plates (33) and the thread rolling rollers (35) are moved in radial and outward directions and released from the

to-be-rolled pipe.

2. An automatic releasing-type tapered thread rolling head as set forth in Claim 1, wherein a plurality of radial guide grooves (36), whose bottoms are parallel to a plane perpendicular to the axis, are provided in the inner surface of the front closure (30a) of the housing; guide grooves (36) identical in dimension to the guide grooves (36) of the front closure (30a), are provided in the inner surface of the rear closure (30c); the shaft bearing plates (33) are provided with shaft bearing holes (33a) for supporting the roller shafts (34) which are slidably fitted in the guide grooves (36) of the front closure (30a) and the rear closure (30c) and which are inserted in the center holes of the discontinuous circumferential groove type rolling rollers (35), said shaft bearing holes being adapted to support the discontinuous circumferential groove type rolling rollers (35), deviated in the direction of the width of the guide grooves (36) of the front closure (30a) or the rear closure (30c), in a position and at an angle corresponding to the lead angle of the thread of the to-be-rolled pipe.

3. An automatic releasing-type tapered thread rolling head as set forth in Claim 1, wherein the shaft bearing plates (33) to rotatably support the thread rolling rollers (35) are provided with projections (33c), integral therewith, that extend in the axial direction of the thread rolling rollers, in the vicinity of the outer oblique surfaces (33b) that are brought into contact with the cam oblique surfaces (31a) of the cam ring (31); the surfaces of the projections (33c) that are located opposite to the oblique surfaces (33b) are substantially in parallel with the oblique surfaces (33b) and are provided, at the lower portions, with surfaces (33d) in parallel with the width direction of the shaft bearing plates (33); pins (38) are provided in the vicinity of the cam oblique surfaces (31a) of the cam ring (31) so

that the projections (33c) can be engaged by the pins (38).

4. An automatic releasing-type tapered thread rolling head as set forth in Claim 1, wherein the portion
5 of the abutment member (41) pressed and moved by the thread-rolled pipe that is to abut against the to-be-rolled pipe, has a circular contour which enables the abutment member to be in contact with the front end surface of the to-be-rolled pipe substantially over the
10 entire periphery.

5. An automatic releasing-type tapered thread rolling head as set forth in Claim 1, wherein foreign matter discharge holes (37b) are provided in the vicinity of the cam oblique surfaces of the cam ring (31) that
15 rotates in the housing (30) and that are brought into contact with the oblique heads of the shaft bearing plates (33) for supporting the thread rolling rollers (35) and foreign matter discharge holes (37a) connected to the foreign matter discharge holes (37b) of the cam
20 ring are provided in the housing (30).

6. An automatic open type tapered thread rolling head as set forth in Claim 1, comprising a buffer arm (48) which can receive the abutment member (41) or a member moving therewith, at an appropriate distance in
25 the axial direction, when the to-be-rolled pipe is thread-rolled to a predetermined length by the thread rolling rollers (35) and the thread rolling rollers (35) are moved in the outward and radial directions and released from the pipe, wherein said buffer arm (48) is
30 detached so as not to damage an apparatus body if the to-be-rolled pipe continues moving in the axial direction, due to failure of the movement of the thread rolling rollers (35) away from the to-be-rolled pipe for some reason.

35 7. An automatic open type tapered thread rolling head as set forth in Claim 1, wherein a scraper (59) for cutting the outer diameter portion of the to-be-rolled

pipe is movably provided at an insertion opening of the housing (30) for the to-be-rolled pipe, said scraper (59) being provided with a cutting blade (59b) and an inner diameter portion (59d), for guiding the to-be-rolled
5 pipe, which are integrally molded.